

Much difference of opinion has existed among philosophers, as to the mode in which the various principles, entering into the composition of atmospheric air, are associated; some maintaining that these principles exist simply in a state of mixture: others considering them as chemically united. We formerly stated that all gaseous bodies, when they combine with one another, combine with reference to their volumes; that is to say, that one volume of one gas always combines with one, two, or more similar volumes of the same, or of another gas, and not with any intermediate fractional part. Now, since atmospheric air is essentially composed of one volume of oxygen, and four volumes of azote, it is evident, whether its elements be in actual union or not, *that it is at least constituted upon strictly chemical principles*; whence it follows, that the composition of the atmosphere has not been the result of accident. In this point of view, therefore atmospheric air may be considered to be as much a chemical compound as water, or any other similar body; and instead of viewing the atmosphere, according to a prevalent notion, as a mere accidental and heterogeneous appendage, connected with the denser matters by no apparent tie; we may fairly rank the atmosphere among the constituent principles of our globe; and as forming a symmetrical part, of the great harmonious whole.